

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 8-10 are objected to under 37 CFR 1.75(c) as being in improper form because they refer both in the singular "...any one of..." and plural form "...or more..." to previous claims making them improperly multiply dependent. See MPEP § 608.01(n). Accordingly, the claims 8-10 have not been further treated on the merits.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the U.S.

3. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Beauferey, et al. {Beauferey} (EP 370898 A2).

Regarding Claims 1-5, Beauferey teaches a laminated flat dielectric (conductive) cable comprising a conductive film layers (B | D | F) made from coppered polyimide ({Beauferey} Description Page 2 | Claim 1). Cover layers are made from polyetheretherketone, fluorocarbon polymers, or POLYCAST adhesive film (A | G) and supportive layers are made from an adhesive epoxy or plastic film (C | E) ({Beauferey} Claim 2). The laminate is formed with pressure and temperature of 171-°C ({Beauferey} Description Page 2). A glass screen can be used to further cover and support the

laminate layers A & G ({Beauferey} Description Pages 1 & 2), which would inherently have pores comprised of the open space between fibers or filaments.

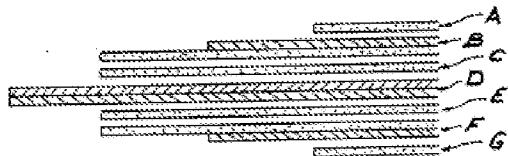
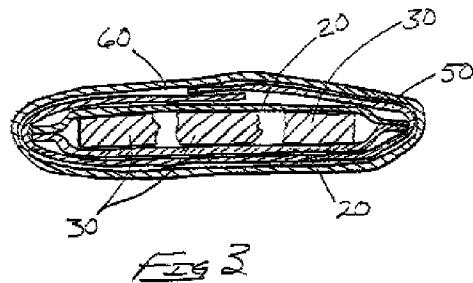


FIG. 1b

4. Claims 1-3 & 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Curro et al. {Curro} (US 20020062974 A1).

Curro teaches a flat electric cable comprising layers of conductors (30), dielectric material (20), supporting metal shield (50), and polymer cover jacket (60) ({Curro} Claims 1-16 | [0038-0039]). The polymer materials can be polyester, polyethylene, polypropylene, polyamide, polyvinylchloride, or other films and is explicitly microporous, bonded, and manufactured with pressure and heat ({Curro} [0040-0041 | 0054-0056 | 0064-0065]).



***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 6 & 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beauferey, et al. {Beauferey} (EP 370898 A2) in view of Curro et al. {Curro} (US 20020062974 A1).

As discussed above, Beauferey teaches a laminated flat dielectric (conductive) cable comprising a conductive film, adhesive, and support layers ({Beauferey} Description Pages 1 & 2 | Claim 1). Beauferey is silent regarding the use of a glass or polymer nonwoven.

As discussed above, Curro teaches a flat electric cable comprising conductors (30), dielectric material (20), shield (50), and jacket (60). The dielectric material is a polymer nonwoven material from a polymer such as polypropylene, polyethylene, copolymers, and expanded (porous) polytetrafluoroethylene ({Curro} Claims 1-16). These materials as a nonwoven are used for its low density and high air content (porosity), which is useful for dielectric materials ({Curro} [0044 & 0045]). Engineering the dielectric strength through materials, construction, and processing the flat wire is

clearly taught to affect the speed of transmission ({Curro} [0045-0048]), which establishes it as a result-effective variable and is unpatentable as claimed; see *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

At the time of the invention, it would have been obvious to one of ordinary skill to select a nonwoven of a particular material and thus engineer the dielectric constant {Curro} for the laminated flat wire with conductor and adhesive layers {Beauferey}. The motivation for these analogous inventions would have been to engineer the cable for particular dielectric constants or strengths ({Curro} [0044-0048]). Further, selection of known materials for conventional uses is unpatentable; see *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Thus, it would have been obvious to combine Beauferey with Curro and obtain the invention as claimed.

8. Claim 4 is rejected under 35 U.S.C. 102(b) as being anticipated by Curro et al. {Curro} (US 20020062974 A1) in view of Beauferey, et al. {Beauferey} (EP 370898 A2).

As discussed above, Curro teaches a flat electric cable comprising conductors (30), dielectric material (20), shield (50), and jacket (60). Curro is silent regarding the temperature needed to activate the thermoplastic adhesive.

As discussed above, Beauferey teaches a laminated flat dielectric (conductive) cable comprising a conductive film, adhesive, and support layers ({Beauferey} Description Pages 1 & 2 | Claim 1). The laminate is formed with pressure and temperature of 171-°C ({Beauferey} Description Page 2) for sufficient bonding to

exclude moisture, flexibility, resistance to chemical attack, and radiation ({Beauferey}  
Description Page 1).

At the time of the invention, it would have been obvious to one of ordinary skill to laminate a flat wire with conductor and adhesive layers at a temperature of 171-°C {Beauferey} for the nonwoven laminated cable {Curro}. The motivation for these analogous inventions would have been to provide sufficient bonding while excluding moisture, flexibility, resistance to chemical attack, and radiation ({Beauferey}  
Description Page 1). Thus, it would have been obvious to combine Curro with Beauferey and obtain the invention as claimed.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892 for additional information.

***Conclusion***

Any inquiry concerning this communication from the Examiner should be directed to Shawn R. Hutchinson whose telephone number is (571) 270-1546. The Examiner can normally be reached on 7 AM to 5 PM, M-H, Fridays off.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, D. Lawrence Tarazano can be reached on (571) 271-1515. The fax phone number for the organization where this application is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call (800) 786-9199 (IN USA OR CANADA) or (571) 272-1000.

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